



## SEQUENCE LISTING

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<120> RPS2 GENE FAMILY, PRIMERS, PROBES, AND  
DETECTION METHODS

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<141> 2003-07-02

<150> US 09/867,852  
<151> 2001-05-29

<150> US 09/301,085  
<151> 1999-04-28

<150> US 08/310,912  
<151> 1994-09-22

<150> US 08/227,360  
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Asp	Ala	Gly	Ser	Gln	Glu	Gly	Cys	Ser	Ser	Glu	Val	Ile	Asn	Phe	Pro
1				5					10				15		
His	Ser	His	Lys	Thr	Arg	Asp	Tyr	Val	Ile	Ile	Lys	Thr	Lys	Leu	Ser
				20				25					30		

Ala

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<211> 25

<212> PRT

<213> Arabidopsis thaliana

<400> 60

Val	Lys	Glu	Arg	Ala	Arg	Asn	His	Arg	Asn	Gly	Phe	His	Leu	Ile	Ser
1				5				10					15		
Tyr	Arg	Trp	Leu	Cys	Ser	Gly	Val	Val							
			20				25								

<210> 61

<211> 10

<212> PRT

<213> Arabidopsis thaliana

<400> 61

Ile	Tyr	Glu	Tyr	Gly	Gly	Glu	Lys	Arg	Thr						
1				5				10							

<210> 62

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<212> PRT

<213> Arabidopsis thaliana

<400> 62

Leu	Glu	Gly	His	Thr											
1				5											

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<212> PRT  
<213> Arabidopsis thaliana

<400> 63  
Pro Asp Phe Thr Asp Pro Thr Arg Arg Ser Arg Gly Thr Lys Leu Leu  
1 5 10 15  
Lys Ser Cys Gln Arg Val Ala  
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<400> 64  
Cys Gly Ala Ser Asn Gly Asp  
1 5

<210> 65  
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<212> PRT  
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<400> 65  
Asn Ser Pro Thr Phe Ser Glu Val  
1 5

<210> 66  
<211> 35  
<212> PRT  
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<400> 66  
Ala Ser Gly Thr Glu Asp Ala Asn Glu Glu Glu Ile Pro Gln Leu Phe  
1 5 10 15  
Arg Leu Cys Arg Leu Gln Thr Val Gln Glu Gly Phe Cys His Ile Glu  
20 25 30  
Glu His Trp  
35

<210> 67  
<211> 5  
<212> PRT  
<213> Arabidopsis thaliana

<400> 67  
Ala Glu Arg Thr Leu  
1 5

<210> 68  
<211> 13

<212> PRT

<213> Arabidopsis thaliana

<400> 68

Ser Tyr Gln Asn Arg Trp Arg Val Asn Ser Ser Asn Leu  
1 5 10

<210> 69

<211> 22

<212> PRT

<213> Arabidopsis thaliana

<400> 69

Arg Asp Thr His Gln Val Arg Cys Arg Lys Tyr His Asp Asp Gly Thr  
1 5 10 15  
Gly Phe Gly Ile Ser Gln  
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<210> 70

<211> 24

<212> PRT

<213> Arabidopsis thaliana

<400> 70

Arg Arg Arg Lys Arg Asn His Trp Cys Leu Trp Thr Trp Trp Gly Trp  
1 5 10 15  
Glu Asp Asn Val Asn Ala Glu His  
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<210> 71

<211> 10

<212> PRT

<213> Arabidopsis thaliana

<400> 71

Gln Arg Ala Asp His Lys Arg Thr Ser Val  
1 5 10

<210> 72

<211> 55

<212> PRT

<213> Arabidopsis thaliana

<400> 72

Cys Thr Asp Leu Gly Ser Asn Val Gln Arg Ile Arg Arg Val Tyr Asn  
1 5 10 15  
Ser Ala Ser Arg Trp Ser Thr Val Gly Phe Ile Leu Gly Arg Glu Gly  
20 25 30  
Asp Arg Arg Lys Gln Ser Phe Glu Asp Ile Gln Ser Phe Glu Thr Glu  
35 40 45  
Thr Phe Leu Val Val Ala Arg  
50 55

<210> 73  
<211> 15  
<212> PRT  
<213> Arabidopsis thaliana

<400> 73  
Cys Leu Gly Arg Asp Arg Leu Gly Glu Asn Trp Ser Ser Ser Thr  
1 5 10 15

<210> 74  
<211> 9  
<212> PRT  
<213> Arabidopsis thaliana

<400> 74  
Arg Asp Arg Arg Arg Val Asp Pro Cys  
1 5

<210> 75  
<211> 41  
<212> PRT  
<213> Arabidopsis thaliana

<400> 75  
Gln Gly Lys Gln Met Gln Gly Asp Val His Asp Thr Val Tyr Ser Ile  
1 5 10 15  
Met Gln Gln Tyr Gly Cys Gly Ile Gln Val Glu Ser Gly Val Ser Gly  
20 25 30  
Glu Glu Thr Arg Val Gly Ala Val Leu  
35 40

<210> 76  
<211> 21  
<212> PRT  
<213> Arabidopsis thaliana

<400> 76  
Gly Met Glu Lys Arg Ser Phe Arg Val Ile Ile Asn Ser Pro Ala Arg  
1 5 10 15  
Gly Asp Tyr Ser Glu  
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<210> 77  
<211> 17  
<212> PRT  
<213> Arabidopsis thaliana

<400> 77  
Met Trp Arg Ile Ala Thr Ser Val Asp His Phe Arg Arg Ser His Gly  
1 5 10 15  
Ser

<210> 78  
<211> 24  
<212> PRT  
<213> Arabidopsis thaliana

<400> 78  
Ile Ser Ser Arg Asp Glu Gly Tyr Glu Leu Cys Ile Cys Pro Phe Glu  
1 5 10 15  
Ile Gln Leu Arg Gln Pro Arg Glu  
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<210> 79  
<211> 24  
<212> PRT  
<213> Arabidopsis thaliana

<400> 79  
Ser Ala Ser Val Leu Phe Leu Val Leu Arg Phe Ile Pro Arg Arg Thr  
1 5 10 15  
Phe Tyr Arg Asp Arg Ala Ala Cys  
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<210> 80  
<211> 14  
<212> PRT  
<213> Arabidopsis thaliana

<400> 80  
Val Leu Gly Arg Arg Arg Val Ser His Gln Leu Pro Trp Arg  
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<210> 81  
<211> 22  
<212> PRT  
<213> Arabidopsis thaliana

<400> 81  
His His Leu Gln Gly Ile Phe Ser His Trp Gly Ser Glu Ser Gly Met  
1 5 10 15  
Phe Val Gly Asn Arg Arg  
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<210> 82  
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<212> PRT  
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<400> 82  
Glu Asn Thr Gly Glu Asp Ala  
1 5

<210> 83  
<211> 43

<212> PRT  
<213> Arabidopsis thaliana

<400> 83  
Lys Thr His Met Pro Glu Thr Asp Asn Thr Asp Ala Pro Thr Glu Gly  
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Leu Phe Glu Glu Asp Ser Asn Arg Val Phe His Ala Tyr Ala Cys Ser  
20 25 30  
Gln Ser Leu Gly Leu Val Val His Lys Tyr His  
35 40

<210> 84  
<211> 11  
<212> PRT  
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<400> 84  
Cys Gly Gln Lys Leu Cys Ile Val Asp Gly Ile  
1 5 10

<210> 85  
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<400> 85  
Gly Ala Asp Pro Ser  
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<210> 86  
<211> 14  
<212> PRT  
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<400> 86  
Ser Arg Lys Leu Ala Thr Ser Val Gly Asp Leu Ile Val Arg  
1 5 10

<210> 87  
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<212> PRT  
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<400> 87  
Gln Asn Pro Asp Leu Ala  
1 5

<210> 88  
<211> 31  
<212> PRT  
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<400> 88

Asp Ser Val Val Tyr Gln Val Phe Gly Gly Val Val Ser Ser Val Tyr  
1 5 10 15  
Val Arg Asn Lys Asp Lys Cys Ile Ala Thr Gly Ala Trp Glu Ser  
20 25 30

<210> 89  
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<213> Arabidopsis thaliana

<400> 89  
Lys Thr Glu Ala Ser Gly Pro Thr Lys Asn Ser Val Ser Ser Asp Asp  
1 5 10 15  
Pro Thr Arg Cys His Met Leu Ala Glu Gln Ala Arg Gly Ser Glu Leu  
20 25 30  
Val Leu Gln Leu Arg Arg Leu Gly Thr Ala Glu Leu Trp Arg Arg  
35 40 45

<210> 90  
<211> 7  
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<400> 90  
Ser Arg Arg Thr Arg Ile Arg  
1 5

<210> 91  
<211> 30  
<212> PRT  
<213> Arabidopsis thaliana

<400> 91  
Leu Gly Ile Leu Gly Lys Pro Asn His Thr Arg Tyr His Cys Ser Leu  
1 5 10 15  
Ile Gly Asp Pro Lys Asn Ser Leu Arg Val Arg Cys Phe Ala  
20 25 30

<210> 92  
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<400> 92  
Thr Tyr Thr Ala Ser Pro Arg  
1 5

<210> 93  
<211> 10  
<212> PRT  
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<400> 93

Thr Pro Leu Leu Gln Ser Pro Ile Thr His  
1 5 10

<210> 94  
<211> 8  
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<400> 94  
Pro Trp Gln Glu Pro Glu Lys Thr  
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<210> 95  
<211> 10  
<212> PRT  
<213> Arabidopsis thaliana

<400> 95  
Leu Gly Val Pro Gly His Thr Arg Arg Phe  
1 5 10

<210> 96  
<211> 58  
<212> PRT  
<213> Arabidopsis thaliana

<400> 96  
Leu Ala Ser Glu Ser Arg Gly Ser Asp Val Thr Gln Pro Ser Gln Leu  
1 5 10 15  
Asn Gln Ser Val Gly Lys Phe Cys Lys Pro Arg Leu Ser Ala Glu Tyr  
20 25 30  
Pro Leu His Lys His Phe Thr Leu Gln Gln Ala Glu Glu Cys Leu Met  
35 40 45  
Gly Ser Glu Thr Pro Lys Ala Arg Gly Asp  
50 55

<210> 97  
<211> 33  
<212> PRT  
<213> Arabidopsis thaliana

<400> 97  
Thr Val Arg Leu Gln Arg Asp Arg Gly Ile Asp Lys Arg Thr Arg Glu  
1 5 10 15  
Ser Ile Arg Arg Arg Ser Asn Ile Val Pro Lys Pro Glu Asp Leu Glu  
20 25 30  
Asn

<210> 98  
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<212> PRT  
<213> Arabidopsis thaliana

<400> 98  
Gly Ser Ala Arg Thr Lys Gln His Pro Pro Ile Ser Ile Phe Ile Pro  
1 5 10 15  
Lys Ser

<210> 99  
<211> 10  
<212> PRT  
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<400> 99  
Asn Ile Ser His His Lys Leu Pro Gln Ser  
1 5 10

<210> 100  
<211> 18  
<212> PRT  
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<400> 100  
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1 5 10 15  
Leu Leu

<210> 101  
<211> 4  
<212> PRT  
<213> Arabidopsis thaliana

<400> 101  
Thr Ser His His  
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<210> 102  
<211> 14  
<212> PRT  
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<400> 102  
Glu Leu Arg Ala Leu Cys Thr Asn Met Ser Ile His Lys Met  
1 5 10

<210> 103  
<211> 23  
<212> PRT  
<213> Arabidopsis thaliana

<400> 103  
Gln Glu Ala Arg Lys Val Val Pro Val Lys Ser Ser Thr Phe His Ile  
1 5 10 15  
Ala Thr Lys Leu Glu Ile Met

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<213> Arabidopsis thaliana
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<400> 104  
Lys Pro Asn Tyr Pro Arg  
1 5

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<211> 1491
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gcccacatcatg gagctatttg gaattttcgc agggttatcg attcgttagtgc ggaacccatt 120  
cattgtttgg aaccaccaac ggacgactta acaagctccc cgaggtgcat gatgaaaatt 180  
gctccagttg ccataaatca cagcccgctc agcaggagg tcccgtcaca cgccggcaccc 240  
actcaggcaa agcaaaccac cttcaatctt gaagctggcg atttagatgc aagaaaaagt 300  
agcgcttcaa gcccggaaac ccgcgcattt ctcgctacta agacagttact cgggagacac 360  
aagatagagg ttccggctt tggagggtgg ttcaaaaaga aatcatctaa gcacgagacg 420  
ggcgggttcaa gtgccaacgc agatagttcg agcgtggctt ccgattccac cggaaaaacct 480  
ttgttccgtc tcacgcacgt tccttacgtt tcccaaggtt atgagcgaat gggatgttgg 540  
tatgcctgctg caagaatggt tggccattctt gtcgaagctg ggcctcgctt agggctgccc 600  
gagctctatg agggaaaggga ggcgcacgtt gggctacaag atttttcaga tgttagaaagg 660  
tttatttaca atgaaggatt aactcgggtt gacccctccag acaatgagag atttacacac 720  
gaagaggttgg gtgcactgtt gtataagcac gggccgattt tattttgggtt gaaaactccg 780  
aatgacagact ggcacatgtc ggtcctcaactt ggtgtcgata aagagacgtc gtccattact 840  
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ttggcatggc aggttccaca cgcaatgtctt taccgctaag tagcagggtt tttcacgtg 960  
gcggcatcat gacaaggccc tgatggccgc agcagctacc tgaatggcgtt ctggcttttt 1020  
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cgactcctca gttccggat cgatcagggtc gcttgcaga ggcgcgttgtt ccatgagcat 1140  
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caactgcccgg ttgcgatacg ctcgatcctt aagccccgggtt gtccatggca gccccaaagaa 1260  
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aaacaccctg cagtcggat cctgctggaa agcatcaatc gccttctgccc gtttcttggg 1380  
cgagtcaactg cccaccaacg tcacgcaccc gacgccaagc ttgaggcagt gtcggccaa 1440  
cgtggccacg gattcctgat actcgcagaa gaggatcacc ttgtcgatc c 1491

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<210> 106
<211> 255
<212> PRT
<213> Arabidopsis thaliana
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Met Lys Ile Ala Pro Val Ala Ile Asn His Ser Pro Leu Ser Arg Glu
      5          10          15
Val Pro Ser His Ala Ala Pro Thr Gln Ala Lys Gln Thr Asn Leu Gln
      20         25         30
Ser Glu Ala Gly Asp Leu Asp Ala Arg Lys Ser Ser Ala Ser Ser Pro
      35         40         45
Glu Thr Arg Ala Leu Leu Ala Thr Lys Thr Val Leu Gly Arg His Lys

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50	55	60	
Ile Glu Val Pro Ala Phe Gly Gly Trp Phe Lys Lys Lys Ser Ser Lys			
65	70	75	80
His Glu Thr Gly Gly Ser Ser Ala Asn Ala Asp Ser Ser Ser Val Ala			
85	90	95	
Ser Asp Ser Thr Glu Lys Pro Leu Phe Arg Leu Thr His Val Pro Tyr			
100	105	110	
Val Ser Gln Gly Asn Glu Arg Met Gly Cys Trp Tyr Ala Cys Ala Arg			
115	120	125	
Met Val Gly His Ser Val Glu Ala Gly Pro Arg Leu Gly Leu Pro Glu			
130	135	140	
Leu Tyr Glu Gly Arg Glu Ala Pro Ala Gly Leu Gln Asp Phe Ser Asp			
145	150	155	160
Val Glu Arg Phe Ile His Asn Glu Gly Leu Thr Arg Val Asp Leu Pro			
165	170	175	
Asp Asn Glu Arg Phe Thr His Glu Glu Leu Gly Ala Leu Leu Tyr Lys			
180	185	190	
His Gly Pro Ile Ile Phe Gly Trp Lys Thr Pro Asn Asp Ser Trp His			
195	200	205	
Met Ser Val Leu Thr Gly Val Asp Lys Glu Thr Ser Ser Ile Thr Phe			
210	215	220	
His Asp Pro Arg Gln Gly Pro Asp Leu Ala Met Pro Leu Asp Tyr Phe			
225	230	235	240
Asn Gln Arg Leu Ala Trp Gln Val Pro His Ala Met Leu Tyr Arg			
245	250	255	

<210> 107  
<211> 1258  
<212> PRT  
<213> Arabidopsis thaliana

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Met Ser Tyr Leu Arg Glu Val Ala Thr Ala Val Ala Leu Leu Pro			
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Phe Ile Leu Leu Asn Lys Phe Asn Arg Pro Asn Ser Lys Asp Ser Ile			
20	25	30	
Val Asn Asp Asp Asp Asp Ser Thr Ser Glu Val Asp Ala Ile Ser Asp			
35	40	45	
Ser Thr Asn Pro Ser Gly Ser Phe Pro Ser Val Glu Tyr Glu Val Phe			
50	55	60	
Leu Ser Phe Arg Gly Pro Asp Thr Arg Glu Gln Phe Thr Asp Phe Leu			
65	70	75	80
Tyr Gln Ser Leu Arg Arg Tyr Lys Ile His Thr Phe Arg Asp Asp Asp			
85	90	95	
Glu Leu Leu Lys Gly Lys Glu Ile Gly Pro Asn Leu Leu Arg Ala Ile			
100	105	110	
Asp Gln Ser Lys Ile Tyr Val Pro Ile Ile Ser Ser Gly Tyr Ala Asp			
115	120	125	
Ser Lys Trp Cys Leu Met Glu Leu Ala Glu Ile Val Arg Arg Gln Glu			
130	135	140	
Glu Asp Pro Arg Arg Ile Ile Leu Pro Ile Phe Tyr Met Val Asp Pro			
145	150	155	160
Ser Asp Val Arg His Gln Thr Gly Cys Tyr Lys Lys Ala Phe Arg Lys			
165	170	175	
His Ala Asn Lys Phe Asp Gly Gln Thr Ile Gln Asn Trp Lys Asp Ala			
180	185	190	
Leu Lys Lys Val Gly Asp Leu Lys Gly Trp His Ile Gly Lys Asn Asp			

195	200	205
Lys Gln Gly Ala Ile Ala Asp	Lys Val Ser Ala Asp	Ile Trp Ser His
210	215	220
Ile Ser Lys Glu Asn Leu Ile Leu Glu Thr Asp	Glu Leu Val Gly Ile	
225	230	235
Asp Asp His Ile Thr Ala Val Leu Glu	Lys Leu Ser Leu Asp Ser	Glu
245	250	255
Asn Val Thr Met Val Gly Leu Tyr	Gly Met Gly Gly Ile	Gly Lys Thr
260	265	270
Thr Thr Ala Lys Ala Val Tyr Asn Lys	Ile Ser Ser Cys Phe Asp Cys	
275	280	285
Cys Cys Phe Ile Asp Asn Ile Arg Glu	Thr Gln Glu Lys Asp Gly Val	
290	295	300
Val Val Leu Gln Lys Lys	Leu Val Ser Glu Ile Leu Arg	Ile Asp Ser
305	310	315
Gly Ser Val Gly Phe Asn Asn Asp Ser	Gly Gly Arg Lys Thr	Ile Lys
325	330	335
Glu Arg Val Ser Arg Phe Lys	Ile Leu Val Val Leu Asp Asp Val Asp	
340	345	350
Glu Lys Phe Lys Phe Glu Asp	Met Leu Gly Ser Pro Lys Asp Phe Ile	
355	360	365
Ser Gln Ser Arg Phe Ile Ile Thr Ser Arg Ser	Met Arg Val Leu Gly	
370	375	380
Thr Leu Asn Glu Asn Gln Cys Lys Leu Tyr	Glu Val Gly Ser Met Ser	
385	390	395
Lys Pro Arg Ser Leu Glu Leu Phe Ser	Lys His Ala Phe Lys Lys Asn	
405	410	415
Thr Pro Pro Ser Ser Tyr Tyr Glu	Thr Leu Ala Asn Asp Val Val Asp	
420	425	430
Thr Thr Ala Gly Leu Pro Leu	Thr Leu Lys Val Ile Gly Ser Leu Leu	
435	440	445
Phe Lys Gln Glu Ile Ala Val Trp Glu Asp	Thr Leu Glu Gln Leu Arg	
450	455	460
Arg Thr Leu Asn Leu Asp Glu Val Tyr Asp	Arg Leu Lys Ile Ser Tyr	
465	470	475
Asp Ala Leu Asn Pro Glu Ala Lys Glu	Ile Phe Leu Asp Ile Ala Cys	
485	490	495
Phe Phe Ile Gly Gln Asn Lys Glu	Glu Pro Tyr Tyr Met Trp Thr Asp	
500	505	510
Cys Asn Phe Tyr Pro Ala Ser Asn Ile Ile Phe Leu	Ile Gln Arg Cys	
515	520	525
Met Ile Gln Val Gly Asp Asp Asp Glu Phe	Lys Met His Asp Gln Leu	
530	535	540
Arg Asp Met Gly Arg Glu Ile Val Arg Arg	Glu Asp Val Leu Pro Trp	
545	550	555
Lys Ser Arg Ile Trp Ser Ala Glu Glu	Gly Ile Asp Leu Leu Asn	
565	570	575
Lys Arg Lys Gly Ser Ser Lys Val Lys Ala Ile Ser	Ile Pro Trp Gly	
580	585	590
Val Lys Tyr Glu Phe Lys Ser Glu	Cys Phe Leu Asn Leu Ser Glu Leu	
595	600	605
Arg Tyr Leu His Ala Arg Glu Ala Met Leu Thr	Gly Asp Phe Asn Asn	
610	615	620
Leu Leu Pro Asn Leu Lys Trp Leu Glu Leu Pro	Phe Tyr Lys His Gly	
625	630	635
Glu Asp Asp Pro Pro Leu Thr Asn Tyr	Thr Met Lys Asn Leu Ile	Ile
645	650	655
Val Ile Leu Glu His Ser His Ile Thr Ala Asp Asp	Trp Gly Gly Trp	

660	665	670
Arg His Met Met Lys Met Ala Glu Arg Leu Lys Val Val	Arg Leu Ala	
675	680	685
Ser Asn Tyr Ser Leu Tyr Gly Arg Arg Val Arg Leu Ser Asp Cys Trp		
690	695	700
Arg Phe Pro Lys Ser Ile Glu Val Leu Ser Met Thr Ala Ile Glu Met		
705	710	715
Asp Glu Val Asp Ile Gly Glu Leu Lys Lys Leu Lys Thr Leu Val Leu		
725	730	735
Lys Pro Cys Pro Ile Gln Lys Ile Ser Gly Gly Thr Phe Gly Met Leu		
740	745	750
Lys Gly Leu Arg Glu Leu Cys Leu Glu Phe Asn Trp Gly Thr Asn Leu		
755	760	765
Arg Glu Val Val Ala Asp Ile Gly Gln Leu Ser Ser Leu Lys Val Leu		
770	775	780
Lys Thr Gly Ala Lys Glu Val Glu Ile Asn Glu Phe Pro Leu Gly Leu		
785	790	795
Lys Thr Glu Leu Ser Thr Ser Arg Ile Pro Asn Asn Leu Ser Gln		
805	810	815
Leu Leu Asp Leu Glu Val Leu Lys Val Tyr Asp Cys Lys Asp Gly Phe		
820	825	830
Asp Met Pro Pro Ala Ser Pro Ser Glu Asp Glu Ser Ser Val Trp Trp		
835	840	845
Lys Val Ser Lys Leu Lys Ser Leu Gln Leu Glu Lys Thr Arg Ile Asn		
850	855	860
Val Asn Val Val Asp Asp Ala Ser Ser Gly Gly His Leu Pro Arg Tyr		
865	870	875
Leu Leu Pro Thr Ser Leu Thr Tyr Leu Lys Ile Tyr Gln Cys Thr Glu		
885	890	895
Pro Thr Trp Leu Pro Gly Ile Glu Asn Leu Glu Asn Leu Thr Ser Leu		
900	905	910
Glu Val Asn Asp Ile Phe Gln Thr Leu Gly Gly Asp Leu Asp Gly Leu		
915	920	925
Gln Gly Leu Arg Ser Leu Glu Ile Leu Arg Ile Arg Lys Val Asn Gly		
930	935	940
Leu Ala Arg Ile Lys Gly Leu Lys Asp Leu Leu Cys Ser Ser Thr Cys		
945	950	955
Lys Leu Arg Lys Phe Tyr Ile Thr Glu Cys Pro Asp Leu Ile Glu Leu		
965	970	975
Leu Pro Cys Glu Leu Gly Val Gln Thr Val Val Val Pro Ser Met Ala		
980	985	990
Glu Leu Thr Ile Arg Asp Cys Pro Arg Leu Glu Val Gly Pro Met Ile		
995	1000	1005
Arg Ser Leu Pro Lys Phe Pro Met Leu Lys Lys Leu Asp Leu Ala Val		
1010	1015	1020
Ala Asn Ile Thr Lys Glu Glu Asp Leu Asp Ala Ile Gly Ser Leu Glu		
1025	1030	1035
Glu Leu Val Ser Leu Glu Leu Glu Leu Asp Asp Thr Ser Ser Gly Ile		
1045	1050	1055
Glu Arg Ile Val Ser Ser Ser Lys Leu Gln Lys Leu Thr Thr Leu Val		
1060	1065	1070
Val Lys Val Pro Ser Leu Arg Glu Ile Glu Gly Leu Glu Leu Lys		
1075	1080	1085
Ser Leu Gln Asp Leu Tyr Leu Glu Gly Cys Thr Ser Leu Gly Arg Leu		
1090	1095	1100
Pro Leu Glu Lys Leu Lys Glu Leu Asp Ile Gly Gly Cys Pro Asp Leu		
1105	1110	1115
Thr Glu Leu Val Gln Thr Val Val Ala Val Pro Ser Leu Arg Gly Leu		
1120		

	1125	1130	1135
Thr Ile Arg Asp Cys Pro Arg Leu Glu Val Gly Pro Met Ile Gln Ser			
	1140	1145	1150
Leu Pro Lys Phe Pro Met Leu Asn Glu Leu Thr Leu Ser Met Val Asn			
	1155	1160	1165
Ile Thr Lys Glu Asp Glu Leu Glu Val Leu Gly Ser Leu Glu Glu Leu			
	1170	1175	1180
Asp Ser Leu Glu Leu Thr Leu Asp Asp Thr Cys Ser Ser Ile Glu Arg			
	1185	1190	1195
Ile Ser Phe Leu Ser Lys Leu Gln Lys Leu Thr Thr Leu Ile Val Glu			
	1205	1210	1215
Val Pro Ser Leu Arg Glu Ile Glu Gly Leu Ala Glu Leu Lys Ser Leu			
	1220	1225	1230
Arg Ile Leu Tyr Leu Glu Gly Cys Thr Ser Leu Glu Arg Leu Trp Pro			
	1235	1240	1245
Asp Gln Gln Gln Leu Gly Ser Leu Lys Asn			
	1250	1255	

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 <212> PRT  
 <213> Arabidopsis thaliana

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Glu Val Leu Asn Asp Lys Gly Ile Lys Thr Phe Gln Asp Asp Lys Arg			
35	40	45	
Leu Glu Tyr Gly Ala Thr Ile Pro Gly Glu Leu Cys Lys Ala Ile Glu			
50	55	60	
Glu Ser Gln Phe Ala Ile Val Val Phe Ser Glu Asn Tyr Ala Thr Ser			
65	70	75	80
Arg Trp Cys Leu Asn Glu Leu Val Lys Ile Met Glu Cys Lys Thr Arg			
85	90	95	
Phe Lys Gln Thr Val Ile Pro Ile Phe Tyr Asp Val Asp Pro Ser His			
100	105	110	
Val Arg Asn Gln Lys Glu Ser Phe Ala Lys Ala Phe Glu Glu His Glu			
115	120	125	
Thr Lys Tyr Lys Asp Asp Val Glu Gly Ile Gln Arg Trp Arg Ile Ala			
130	135	140	
Leu Asn Glu Ala Ala Asn Leu Lys Gly Ser Cys Asp Asn Arg Asp Lys			
145	150	155	160
Thr Asp Ala Asp Cys Ile Arg Gln Ile Val Asp Gln Ile Ser Ser Lys			
165	170	175	
Leu Cys Lys Ile Ser Leu Ser Tyr Leu Gln Asn Ile Val Gly Ile Asp			
180	185	190	
Thr His Leu Glu Lys Ile Glu Ser Leu Leu Glu Ile Gly Ile Asn Gly			
195	200	205	
Val Arg Ile Met Gly Ile Trp Gly Met Gly Gly Val Gly Lys Thr Thr			
210	215	220	
Ile Ala Arg Ala Ile Phe Asp Thr Leu Leu Gly Arg Met Asp Ser Ser			
225	230	235	240
Tyr Gln Phe Asp Gly Ala Cys Phe Leu Lys Asp Ile Lys Glu Asn Lys			
245	250	255	
Arg Gly Met His Ser Leu Gln Asn Ala Leu Leu Ser Glu Leu Leu Arg			

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275	280	285
Ser Arg Leu Arg Ser Lys Lys Val	Leu Ile Val Leu Asp Asp Ile Asp	
290	295	300
Asn Lys Asp His Tyr Leu Glu Tyr Leu Ala Gly Asp Leu Asp Trp Phe		
305	310	315
Gly Asn Gly Ser Arg Ile Ile Ile Thr Thr Arg Asp Lys His Leu Ile		
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Glu Lys Asn Asp Ile Ile Tyr Glu Val Thr Ala Leu Pro Asp His Glu		
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Ser Ile Gln Leu Phe Lys Gln His Ala Phe Gly Lys Glu Val Pro Asn		
355	360	365
Glu Asn Phe Glu Lys Leu Ser Leu Glu Val Val Asn Tyr Ala Lys Gly		
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Leu Pro Leu Ala Leu Lys Val Trp Gly Ser Leu Leu His Asn Leu Arg		
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Leu Thr Glu Trp Lys Ser Ala Ile Glu His Met Lys Asn Asn Ser Tyr		
405	410	415
Ser Gly Ile Ile Asp Lys Leu Lys Ile Ser Tyr Asp Gly Leu Glu Pro		
420	425	430
Lys Gln Gln Glu Met Phe Leu Asp Ile Ala Cys Phe Leu Arg Gly Glu		
435	440	445
Glu Lys Asp Tyr Ile Leu Gln Ile Leu Glu Ser Cys His Ile Gly Ala		
450	455	460
Glu Tyr Gly Leu Arg Ile Leu Ile Asp Lys Ser Leu Val Phe Ile Ser		
465	470	475
Glu Tyr Asn Gln Val Gln Met His Asp Leu Ile Gln Asp Met Gly Lys		
485	490	495
Tyr Ile Val Asn Phe Gln Lys Asp Pro Gly Glu Arg Ser Arg Leu Trp		
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Leu Ala Lys Glu Val Glu Glu Val Met Ser Asn Asn Thr Gly Thr Met		
515	520	525
Ala Met Glu Ala Ile Trp Val Ser Ser Tyr Ser Ser Thr Leu Arg Phe		
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Ser Asn Gln Ala Val Lys Asn Met Lys Arg Leu Arg Val Phe Asn Met		
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Gly Arg Ser Ser Thr His Tyr Ala Ile Asp Tyr Leu Pro Asn Asn Leu		
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Arg Cys Phe Val Cys Thr Asn Tyr Pro Trp Glu Ser Phe Pro Ser Thr		
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Phe Glu Leu Lys Met Leu Val His Leu Gln Leu Arg His Asn Ser Leu		
595	600	605
Arg His Leu Trp Thr Glu Thr Lys His Leu Pro Ser Leu Arg Arg Ile		
610	615	620
Asp Leu Ser Trp Ser Lys Arg Leu Thr Arg Thr Pro Asp Phe Thr Gly		
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Met Pro Asn Leu Glu Tyr Val Asn Leu Tyr Gln Cys Ser Asn Leu Glu		
645	650	655
Glu Val His His Ser Leu Gly Cys Cys Ser Lys Val Ile Gly Leu Tyr		
660	665	670
Leu Asn Asp Cys Lys Ser Leu Lys Arg Phe Pro Cys Val Asn Val Glu		
675	680	685
Ser Leu Glu Tyr Leu Gly Leu Arg Ser Cys Asp Ser Leu Glu Lys Leu		
690	695	700
Pro Glu Ile Tyr Gly Arg Met Lys Pro Glu Ile Gln Ile His Met Gln		
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Gly Ser Gly Ile Arg Glu Leu Pro Ser Ser Ile Phe Gln Tyr Lys Thr		

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His Val Thr Lys Leu Leu Leu Trp Asn Met Lys Asn Leu	Val Ala Leu	
740	745	750
Pro Ser Ser Ile Cys Arg Leu Lys Ser Leu Val Ser	Leu Ser Val Ser	
755	760	765
Gly Cys Ser Lys Leu Glu Ser Leu Pro Glu Glu Ile	Gly Asp Leu Asp	
770	775	780
Asn Leu Arg Val Phe Asp Ala Ser Asp Thr Leu Ile	Leu Arg Pro Pro	
785	790	800
Ser Ser Ile Ile Arg Leu Asn Lys Leu Ile Ile	Leu Met Phe Arg Gly	
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Phe Lys Asp Gly Val His Phe Glu Phe Pro Pro	Val Ala Glu Gly Leu	
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His Ser Leu Glu Tyr Leu Asn Leu Ser Tyr Cys Asn	Leu Ile Asp Gly	
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His Arg Val Lys Leu Asp Asp Ala His Asn Asp	Thr Met Tyr Asn Leu	
930	935	940
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Ser Ala Ser Asp Ser Leu Ser Leu Thr Val Phe	Thr Gly Gln Pro Tyr	
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Pro Glu Lys Ile Pro Ser Trp Phe His His Gln	Gly Trp Asp Ser Ser	
980	985	990
Val Ser Val Asn Leu Pro Glu Asn Trp Tyr Ile	Pro Asp Lys Phe Leu	
995	1000	1005
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Ala Asn Gly Lys Thr Pro Asn Asp Tyr Gly Ile Ile	Arg Leu Ser Phe	
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Ser Gly Glu Glu Lys Met Tyr Gly Arg Leu Arg	Leu Tyr Lys Glu Gly	
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Val Ser Val Met Ala Tyr Lys Ala Glu Tyr Val Ile Asp Ser Cys Leu  
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Ala Tyr Ser His Pro Leu Trp Tyr Lys Val Leu Trp Ile Ser Glu Val  
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Arg Arg Asn Thr Glu Val Thr Val His Glu Val Ala Lys Thr Thr Thr  
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165 170 175  
Thr Ser Arg Phe Asp Val His Ala Gln Cys Val Val Thr Gln Leu Tyr  
180 185 190  
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Ser Asp Arg Asn Glu Lys Glu Asp Gly Glu Ile Ala Asp Glu Leu Arg  
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Arg Phe Leu Leu Thr Lys Arg Phe Leu Ile Leu Ile Asp Asp Val Trp  
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Asp Tyr Lys Val Trp Asp Asn Leu Cys Met Cys Phe Ser Asp Val Ser  
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260 265 270  
Tyr Val Lys Cys Glu Ser Asp Pro His His Leu Arg Leu Phe Arg Asp  
275 280 285  
Asp Glu Ser Trp Thr Leu Leu Gln Lys Glu Val Phe Gln Gly Glu Ser  
290 295 300  
Cys Pro Pro Glu Leu Glu Asp Val Gly Phe Glu Ile Ser Lys Ser Cys  
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Arg Gly Leu Pro Leu Ser Val Val Leu Val Ala Gly Val Leu Lys Gln  
325 330 335  
Lys Lys Lys Thr Leu Asp Ser Trp Lys Val Val Glu Gln Ser Leu Ser  
340 345 350  
Ser Gln Arg Ile Gly Ser Leu Glu Glu Ser Ile Ser Ile Ile Gly Phe  
355 360 365  
Ser Tyr Lys Asn Leu Pro His Tyr Leu Lys Pro Cys Phe Leu Tyr Phe  
370 375 380  
Gly Gly Phe Leu Gln Gly Lys Asp Ile His Asp Ser Lys Met Thr Lys  
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<212> PRT

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Ser	Leu	Lys	Lys	Ile	Pro	Thr	Gly	Phe	Phe	Met	His	Met	Pro	Val	Leu	
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Arg	Val	Leu	Asp	Leu	Ser	Phe	Thr	Ser	Ile	Thr	Glu	Ile	Pro	Leu	Ser	
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Ile	Lys	Tyr	Leu	Val	Glu	Leu	Tyr	His	Leu	Ser	Met	Ser	Gly	Thr	Lys	
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Ala	Gly	Trp	Glu	Leu	Gln	Ser	Phe	Gly	Glu	Asp	Glu	Ala	Glu	Glu	Leu	
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Thr	Val	Leu	Ser	Leu	Glu	Thr	Leu	Lys	Thr	Leu	Phe	Glu	Phe	Gly	Ala	
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His Ser Leu His Asn Leu Thr Arg Val Trp Gly	Asn Ser Val Ser Gln		
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Lys Lys Leu Pro Phe Gln Glu Arg Arg Thr	Gln Met Asn Leu Pro Thr		
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<222> (1)...(17)
<223> n = A,T,C or G

<400> 187
ggnytnmrnw snytnga 17

<210> 188
<211> 13
<212> PRT
<213> Arabidopsis thaliana

<400> 188
Leu Lys Phe Ser Tyr Asp Asn Leu Glu Ser Asp Leu Leu
 1           5           10

<210> 189
<211> 16
<212> PRT
<213> Arabidopsis thaliana

<400> 189
Gly Val Tyr Gly Pro Gly Gly Val Gly Lys Thr Thr Leu Met Gln Ser
 1           5           10           15

<210> 190
<211> 14
<212> PRT
<213> Arabidopsis thaliana

<400> 190
Gly Gly Leu Pro Leu Ala Leu Ile Thr Leu Gly Gly Ala Met
 1           5           10

<210> 191
<211> 11

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<212> PRT
<213> Arabidopsis thaliana

<220>
<221> VARIANT
<222> (2)...(2)
<223> Xaa is Met or Pro

<221> VARIANT
<222> (3)...(3)
<223> Xaa is Gly or Pro

<221> VARIANT
<222> (5)...(5)
<223> Xaa is Ile, Leu or Val

<221> VARIANT
<222> (10)...(10)
<223> Xaa is Ile, Leu or Thr

<221> VARIANT
<222> (11)...(11)
<223> Xaa is Ala or Met

<400> 191
Gly Xaa Xaa Gly Xaa Gly Lys Thr Thr Xaa Xaa
 1           5           10

<210> 192
<211> 11
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> VARIANT
<222> (1)...(11)
<223> Xaa at 1 is Phe or Lys; Xaa at 2 is Arg or Lys;
      Xaa at 3 is Ile, Val or Phe; Xaa at 5 is Ile, Leu
      or Val; Xaa at 6 is Ile or Leu; Xaa at 7 is Ile or
      Val; Xaa at 10 is Ile, Leu or Val; Xaa at 11 is
      Asp or Trp;

<400> 192
Xaa Xaa Xaa Leu Xaa Xaa Xaa Asp Asp Xaa Xaa
 1           5           10

<210> 193
<211> 8
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> VARIANT
<222> (1)...(8)
<223> Xaa at 1 is Ser or Cys; Xaa at 2 is Arg or Lys;
      Xaa at 3 is Phe, Ile or Val; Xaa at 4 is Ile or

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Met; Xaa at 5 is Ile, Leu or Phe; Xaa at 7 is Ser,  
Cys or Thr;

<400> 193  
Xaa Xaa Xaa Xaa Xaa Thr Xaa Arg  
1 5

<210> 194  
<211> 8  
<212> PRT  
<213> Arabidopsis thaliana

<220>  
<221> VARIANT  
<222> (1)...(8)  
<223> Xaa at 5 is Thr, Ala or Thr; Xaa at 6 is Leu or  
Val; Xaa at 7 is Ile, Val or Lys; Xaa at 8 is Val  
or Thr;

<400> 194  
Gly Leu Pro Leu Xaa Xaa Xaa Xaa  
1 5

<210> 195  
<211> 7  
<212> PRT  
<213> Arabidopsis thaliana

<220>  
<221> VARIANT  
<222> (1)...(7)  
<223> Xaa at 1 is Lys or Gly; Xaa at 2 is Ile or Phe;  
Xaa at 5 is Asp or Lys; Xaa at 6 is Ala, Gly or  
Asn;

<400> 195  
Xaa Xaa Ser Tyr Xaa Xaa Leu  
1 5

<210> 196  
<211> 4  
<212> PRT  
<213> Arabidopsis thaliana

<400> 196  
Asn Ser His Arg  
1

<210> 197

<400> 197  
000

<210> 198  
<211> 4  
<212> PRT  
<213> Arabidopsis thaliana

<400> 198  
Thr Gly Asp Leu  
1

<210> 199  
<211> 4  
<212> PRT  
<213> Arabidopsis thaliana

<400> 199  
His Gly Thr Tyr  
1

<210> 200  
<211> 11  
<212> PRT  
<213> Arabidopsis thaliana

<400> 200  
Arg Met Ser His Gly Phe Arg Asn Ser Gln Ser  
1 5 10

<210> 201  
<211> 27  
<212> PRT  
<213> Arabidopsis thaliana

<400> 201  
Gly Glu Met Val Glu Ser Thr Gly Lys Arg Ser Thr Lys Arg Arg Ala  
1 5 10 15  
Leu Leu Phe Thr Ala Leu Cys Ser Lys Leu Ile  
20 25

<210> 202  
<211> 9  
<212> PRT  
<213> Arabidopsis thaliana

<220>  
<221> VARIANT  
<222> (1)...(9)  
<223> Xaa at position 5 is Met or Asp

<400> 202  
Pro Ile Phe Tyr Xaa Val Asp Pro Ser  
1 5

<210> 203

<211> 6  
<212> PRT  
<213> Arabidopsis thaliana

<220>  
<221> VARIANT  
<222> (1)...(6)  
<223> Xaa at position 5 is Asp or Thr

<400> 203  
Val Gly Ile Asp Xaa His  
1 5

<210> 204  
<211> 9  
<212> PRT  
<213> Arabidopsis thaliana

<220>  
<221> VARIANT  
<222> (1)...(9)  
<223> Xaa at position 1 is Gln or Leu; Xaa at position 2  
is Leu or Ile; Xaa at position 3 is Arg or Gln.

<400> 204  
Met His Asp Xaa Xaa Xaa Asp Met Gly  
1 5

<210> 205  
<211> 6  
<212> PRT  
<213> Arabidopsis thaliana

<400> 205  
Ser Lys Leu Lys Ser Leu  
1 5

<210> 206  
<211> 8  
<212> PRT  
<213> Arabidopsis thaliana

<220>  
<221> VARIANT  
<222> (1)...(8)  
<223> Xaa at position 3 is Arg or His; Xaa at position 7  
is Ile or Tyr.

<400> 206  
Gly Leu Xaa Ser Leu Glu Xaa Leu  
1 5

<210> 207  
<211> 6

<212> PRT  
<213> Arabidopsis thaliana

<400> 207  
Ser Lys Leu Lys Ser Leu  
1 5

<210> 208  
<211> 7  
<212> PRT  
<213> Arabidopsis thaliana

<400> 208  
Lys Phe Ser Tyr Asp Asn Leu  
1 5

<210> 209  
<211> 23  
<212> PRT  
<213> Arabidopsis Thalia

<220>  
<221> VARIANT  
<222> 2,3,5,6,8,9,11,12,14,16-9,21,22  
<223> Xaa=any amino acid

<221> VARIANT  
<222> 4,15,20,23  
<223> Xaa=L or I or V

<400> 209  
Pro Xaa Xaa Xaa Xaa Xaa Leu Xaa Xaa Leu Xaa Xaa Leu Xaa Xaa Xaa  
1 5 10 15  
Xaa Xaa Xaa Xaa Xaa Xaa  
20

<210> 210  
<211> 23  
<212> PRT  
<213> Yeast

<220>  
<221> VARIANT  
<222> 2,3,5,6,8,9,11,12,14,16,17,19,21,22  
<223> Xaa= any amino acid

<221> VARIANT  
<222> 4,20,23  
<223> Xaa=L or I or V

<400> 210  
Pro Xaa Xaa Xaa Xaa Xaa Leu Xaa Xaa Leu Xaa Xaa Leu Xaa Leu Xaa  
1 5 10 15  
Xaa Asn Xaa Xaa Xaa Xaa  
20

<210> 211  
<211> 12  
<212> PRT  
<213> Arabidopsis thaliana

<220>  
<221> VARIANT  
<222> 2,3,5,6,8,9,11  
<223> Xaa=any amino acid

<221> VARIANT  
<222> 1  
<223> Xaa=I or L or V

<221> VARIANT  
<222> 10  
<223> Xaa=I or L

<400> 211  
Xaa Xaa Xaa Leu Xaa Xaa Leu Xaa Xaa Xaa Xaa Leu  
1 5 10

<210> 212  
<211> 7  
<212> PRT  
<213> Arabidopsis thaliana

<220>  
<221> VARIANT  
<222> 1  
<223> Xaa=I or R

<221> VARIANT  
<222> 2,5-7  
<223> Xaa=any amino acid

<400> 212  
Xaa Xaa Asp Leu Xaa Xaa Xaa  
1 5

<210> 213  
<211> 8  
<212> PRT  
<213> Arabidopsis thaliana

<400> 213  
Gly Pro Gly Gly Val Gly Lys Thr  
1 5

<210> 214  
<211> 16  
<212> PRT  
<213> Arabidopsis thaliana

<400> 214  
Thr Tyr Gly Ala Tyr Gly Ala Tyr Arg Thr Asx Tyr Arg Asx Arg Ala  
1 5 10 15